4:Grajdanzev--46-47 S-4 (no date) 1942 Formosans-1-3
116, 171, 241, 454, 433, 177.24 Japan
636.24

"(3) Increased agricultural production may also be achieved by raising yields per unit of area. Below we give a comparison of yields in Taiwan and in Japan, and in the case of sugar cane, the area of which in Japan is too small, a comparison with Hawaii and the Netherlands Indies, where conditions are similar to those in Taiwan, while groundnut production in Taiwan is compared to that of Kwantung.

Crop Yields In Quintals Per Hectare in Taiwan and Other Countries.

		1928-32 average	1933-37 average	1937
Wheat	Taiwan	8.7	9.7	10.7
	Japan	17.7	19.1	19.1
Barley	Taiwan	6.4	8.0	7.4
	Japan	19.9	20.6	20.9
Maize	Taiwan	11.3	10.8	11.6
	Japan	14.1	14.7	16.7
Rice	Taiwan	22.2	25.1	26.1
	Japan	35.0	36.8	38.6
Sugar cane	Taiwan	684.4	654.4* Four-year average 1933-36.	...
	N. E. I.	1,308.0	1,374* Four-year average 1933-36.	...
	Hawaii	1,349.4	1,515* Four-year average 1933-36.	...

		1928-32 average	1933-37 average	1937
Soya beans	Taiwan	5.6	5.7	6.2
	Japan	10.0	10.0	11.2
Groundnuts	Taiwan	16.2	17.1	18.4
	Kwantung	19.0	20.7	...
Sesamum	Taiwan	3.5	3.9	4.2
	Japan	7.3	7.5	7.5

The yields per hectare of the most important plants in Taiwan's economy are therefore thirty to fifty per cent less than in Japan, or, in the case of sugar, in Hawaii or the Netherlands East Indies, and yet all available sources mention the fertility of the soil in Taiwan, while climatic conditions are at least as good as in Japan or the Netherlands Indies.

The explanation lies in the primitive methods of Taiwan [47] agriculture, including the slight use of fertilizers. Judging by the cultivated area and the number of farmers, the island should have at least 300,000 to 400,000 ploughs, but in 1929 (1) almost all (except

1. The last data available, Nogyo nenkan, p. 642.

18,315 'improved' ploughs for deeper ploughing and 614 of the European type) were of the

primitive Chinese pattern. While in Japan proper an average of ¥170 to ¥180 per hectare is spent each year on commercial and home-prepared fertilizers, in Taiwan less than half that sum is spent for this purpose. These two examples—ploughs and fertilizers—for which quantitative data are available show clearly that Taiwan farming is under-capitalized, especially when we consider that the farmer is obliged to pay ¥2,000 per ko for good land.

This does not of course mean that there is no improvement in the agriculture of Taiwan. The government devotes much effort to increasing the productivity of the farms and the farmers are eager to respond. Yields are now higher than they were twenty years ago, as one may see from the tables given later in this chapter. But progress is slow. It is doubtful whether yields in Japan in 1895—the time of the annexation of the island—were higher than in Taiwan, whereas now they are considerably greater and relatively Taiwan is lagging further and further behind."

4:Grajdanzev--94-96 S-4 (no date) 1942 Formosans-1-3
116, 454, 471, 472, 473

"Finally, we may compare these industries from the point of view of the amount of capital invested in them: (1) [95]

1. Only paid-up capital is included because data for the reserves of smaller corporations could not be found.

Capital Invested in Taiwan's Industry in 1937
(million yen)

	Corporations	Limited partnership	Unlimited partnership	Total
Textile industry	2.7	0.1	0.1	2.9
Machine	3.9	0.9	0.1	4.9
Ceramics	3.3	0.2	0.1	3.6
Chemical	9.6	0.3	0.2	10.1
Lumber	1.5	1.1	0.1	2.7
Food	113.1	4.6	0.4	118.1
Printing	0.5	0.1	...	0.6
Gas and Electricity	47.0	...	...	47.0
Others	1.0	0.3	0.3	1.6
Total	182.6	7.6	1.3	191.5*

Footnote on next page.

* The official estimate of the total capital of industry on Dec. 31, 1937, was ¥258.5 million but it is not clear whether this figure includes nominal capital or only paid-up capital and, whether it includes other investments, government enterprises etc.

Source: Taiwan Jijo, 1939.

Again the food industry is in first place. Actually its position is much more important because it has accumulated considerable reserves. Next in importance is gas and electricity because here investments play a greater part than the number of men occupied while ceramics and printing are poor in capital. It may be of interest to compare the average investment per enterprise for the same year:

Paid -Up Capital per Business Unit
(1,000 yen)

	Corporations	Limited partnership	Unlimited partnership	Average (weighted)
Textile	671	60	120	477
Machine	353	38	45	123
Ceramics	276	21	33	155
Chemical	387	37	115	289
Lumber	163	93	23	106
Food	1,509	78	44	832

Paid-Up Capital per Business Unit Cont.
(1,000 yen)

	Corporations	Limited partnership	Unlimited partnership	Average (weighted)
Printing	101	12	...	41
Gas and electricity	7,836	10	...	6,718
Others	76	13	68	38
All industry	1,127	51	54	578

[96] We see from this table that in Taiwan there are very large enterprises in the electric power, food, and textile industries, where capital per enterprise is relatively large, while enterprises in the printing, machine, lumber, ceramics and 'other' industries are very small in size. It should be pointed out that individual enterprises are not included here, (2) but both their capital and the value of their products are insignificant

2. The number of individual enterprises in 1934 were reported as follows: 62 in textiles, 91 in metals, 173 in machinery, 588 in ceramics, 428 in chemicals, 3,960 in foods, 256 in lumber, 126 in printing and 381 in others, a total of 6,065, almost all of them Chinese (Takahashi, op. cit., p. 438).

in comparison with those of the companies."

4:Grajdanzev--96-97 S-4 (no date) 1942 Formosans-1-2
116, 171, 454, 471, 473, 177.47 Japan
636.47

"It is also interesting to compare the size of the companies in Taiwan as regards capital with those in Japan proper and in Korea.

Industrial Companies, their Total and Average Capital in the Japanese Empire, December 31, 1937.

	Companies, number	Total paid-up capital and investments (million yen)	Capital per enterprise (1,000 yen)	Capital per capita of population (yen)
Japan proper	30,518	9,396.9	308	132
Korea	981	246.2	251	11
Taiwan	335	191.5	572	34
Kwantung	358	96.9	271	81
Karafuto	88	33.6	382	103

Source: Dainippon teikoku tokei nenkan, 1939.

It is clear that Taiwan and Korea are poorly supplied with capital per capita of population, but there is an important difference between them: the average capital per company in Taiwan is higher than in any other part of the Japanese Empire, including Japan proper. These are averages and include small as well as large companies, but behind them one may see the silhouettes of big corporations dominating the economic life of Taiwan,

corporations which have few equals even in industrially developed Japan (1).

1. By size of total paid-up capital the corporations and partnerships in industry in Taiwan were distributed as follows: [97]

Size	Number of companies	per cent of total	Total paid-up capital (1,000 yen)	per cent of total
Less than ¥10,000	50	14.9	253	0.1
¥ 10,000- 49,000	111	33.1	1,922	1.0
¥ 50,000- 99,000	34	10.2	1,276	0.7
¥ 100,000- 199,000	48	14.3	3,020	1.6
¥ 200,000- 499,000	40	11.9	4,878	2.5
¥ 500,000- 999,000	20	6.0	4,694	2.5
¥1,000,000- 4,999,000	25	7.5	24,077	12.6
¥ 5,000,000- 9,999,000	2	0.6	5,700	3.0
Over ¥ 10,000,000	5	1.5	145,316	76.0
Total	335	100.0	191.1	100.0

Thus, 32 companies—9.6 per cent of the total number—had 91.6 per cent of the total capital of companies."

4:Grajdanzev--106-107 S-4 (no date) 1942 Formosans
116, 316, 433, 454, 177.31 Japan
636.31

"Mining occupies a relatively unimportant position in Taiwan. In 1936, the last year for which data are available, the gross value of mineral products was Y28,727,000, less than ten per cent of the value of industrial production and less than one per cent of total production. But as regards the capital invested, the attention given by the government to oil and, recently, to gold, and the subsidies lavished on actual and potential producers of oil, it occupies quite a prominent position. The caiptal of the mining industry at the end of 1937 was Y46,635,000 (1). There were twenty-four companies, [107] but, just

1. It is not clear whether this is subscribed or paid-up capital, or whether this sum includes reserves and other investments.

as in other fields, three companies dominated the field; Taiyo Kogyo, Taiwan Kogyo, and Keelung Tanko (coal), (2) each having capital of over Y5,000,000.

2. The paid-up capital of this corporation is Y7 million and out of 140,000 shares 43,473 are in the hands of Mitsui Kosan and 41,656 in the hands of Mitsui Bussan."

4:Granjdanzev--118-119 S-4 (no date) 1942 Formosans
116, 454, 496, 655, 177.49 Japan
636.49

"In 1926 there were 950 km.(1) of government railroads in Taiwan; in 1938 there were

1. Taiwan, Its System of Communication and Transportation, 1929.

1,040 km. The lengths of private railways at the same dates were 525 km. and 521 km. respec-[119]tively—a slight decrease. In other words, in the last decade the construction of new railroads in Taiwan has almost stopped. At the end of 1938 the capital invested in the government railroads including expenditures on repairs and restorations was ¥172,499,691."

15: U.S. Navy -- 27 [6] (no date) 1944 Formosans
116, 454, 511, 556, 563

"As an indication of the relative wealth of individuals in Taiwan, it is notable that bank and postal savings deposits of Japanese in Taiwan are from seven to ten times larger than the average deposits of Formosans. It will be noted in the following table that per capita wealth increased rapidly until the outbreak of war between Japan and China in 1937.

Table 22: Average Savings per Depositor in Post Office Accounts

	1921	1929	1934
Japanese	¥33.3	¥51.0	¥146.5
	($15.98)	($23.96)	($44.27)
Formosan	¥8.2	¥16.6	¥14.2
	($3.93)	($7.63)	($4.29)"

576 promotion of education, for moral culture, for music, drama, and literary activities. Various kinds of secret societies and fraternities also existed.

4. The number and types of Associations: As folk associations are essential for the life of the people in folk society, we can expect that there were numerous such associations in agrarian Formosa. Some data exist which wil enable us to make an estimate. The Japanese colonial government made a survey of religion from 1915 to 1918, and the result was published in 1919, as "The Report of the Survey of Religion in Taiwan", Vol. 1. According to this report there was 6,159 associations with 291,161 members.[3] Since informal associations are hard to identify and may not have been recorded, the actual number is likely to be larger than the reported figure.

• 454 The above figure did not include the associations for mutual financial aid (the hui). According to a survey by the Japanese in 1922, there were 2,055 hui with 24,428 members in Taipei prefecture, 145 hui with 1,720 members in Taichung prefecture. They estimated the number in other prefectures of the island to be 2,200 hui with 26,138 members.

3. Table 27.

454 Thus there was a total of 4,400 hui with 52,286 members in Formosa.[4] If we add these figures to the above, there were 10,569 associations with 343,447 members around 1922. The Formosan population in 1922 (excluding Japanese) was about 3.7 millions, so more than 9 per cent participated in some association. Since this 9 per cent represents adult members of each household, it is evident that a substantiat proportion of households in Formosa participated in associations.

575 All folk associations retained some religious character, so the Japanese treated them all as religious associations. In fact they were organized for a great variety of purposes. In "The Report of the Survey of Religion in Taiwan," eight kinds of associations are enumerated:[5]

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4. Chen Yunghu: "The business of Ho-huei in Taiwan." The Quarterly of the Bank of Taiwan, Vol. V. No. 4, 1953, p. 123.
5. Table 23, p. 129.

[27] Economic dependency on Japan was accentuated 648 by the employment of only Japanese in both 459 technical and managerial positions. From the beginning of the Japanese control, trade was confined almost exclusively to territories within the Japanese empire and managed for the most part by Japanese personnel. Japan took between 90 and 95 per cent of Formosa's exports and supplied 85 to 90 per cent of the island's imports. Some sugar and coal were shipped to China, and small quantities of tea and camphor were sent to the United States. 648 Banking and currency were linked to the 454 Japanese system, and all capital investment was controlled by the Japanese.[5] "Every year, for at least fifteen years previous to the war, Japan is believed to have gained directly 150 million yen from her investments in Taiwan, and for the fifteen years before that lesser but still significant sums".[6]

648 Some of the Japanese industrial projects 727 were never completed. Others wer destroyed

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5. By 1939, 90% of all the capital invested in the island was held either by the Japanese government or Japanese nationals; the remaining 10% held by Formosans was mostly invested in small shops. Taiwan, A Geographical Appreciation, Ottawa, Department of Mines and Technical Surveys, Government of Canaca, 1952, p. 16.

6. Ginsburg, op. cit., p. 25.

52:Barclay S-5 (nodate)1954 AD1 Formosa AD1

654 454 471

also maintained a zealous staff of workers to put new findings into effect. Taiwanese villagers were mobilized into compulsory associations to utilize the information, and the program was carried on with close cooperation by local authorities.

In addition to these measures, certain of the large Japanese expenditures on outright heavy investment helped to modify agricultural productivity of Taiwanese. The building of railroads, large-scale facilities for irrigation and flood control, and in later years factories for processing agricultural produce all worked some radical changes in the relations between the farms and the markets abroad. But these reached down only occasionally to disturb the operation of individual peasant farming. What one Japanese writer has called the process of "capitalist development in Taiwanese agriculture" was not so much a matter of developing investment in agriculture itself as of surrounding agriculture with capital improvements.[14]

Many improvements were introduced directly by the Government-General. Usually a charge was levied on their use or the expense was defrayed by heavy taxation. The government matched each of these steps of its own by prompting the large private firms to carry on parallel works inside their corporate domains. This sort of extra-curricular investment was widely undertaken by Japanese companies, and led to the growth of giant integrated concerns, some larger than their counterparts in Japan.[15]

A remarkable set of inducements existed for engaging in this sort of corporate expansion. Taiwan in the first place had the reputation of being the most profitable locale for investment in the Empire.[16] In addition to this, the Government-General frequently offered subsidies, partial subscription of funds by itself, special legal privileges, a trifling burden of taxation, and in general more cordial relations with the state than were available elsewhere. The response to these terms was apparently more enthusiastic than had been anticipated. It rose at times to feverish speculation, followed by short depressions among Japanese financial circles,[17] and led the Government-General to impose restrictive schemes for fixing prices and output.

[14] Yanaihara, Tadao (1929), p. 140 ff. He points out that most Japanese held land as landlords, like the Taiwanese, not as capitalists. The exception to this rule—and it is a large exception—was the management of sugar-growing plantations by a few of the large sugar-processing companies.

[15] Grajdanzev, A. J. (1942), p. 96.

[16] Yanaihara (1929), p. 146.

[17] Price movements of rice and sugar in Japan intensified some of these effects, especially in the late 1920's and for several years after 1930. See Grajdanzev (1942), pp. 99-101.

52:Barclay S-5 (nodate)1954 AD1 Formosa AD1

There was still another category, a somewhat subtler one, by which Japanese investment was injected into Taiwan's economy. This consists of what might be called organizational changes, like banking facilities and the formation of stable domestic markets for disposing of produce. Many such features had been notably absent before 1895, when most commodity markets were no more than local in scope, prices fluctuated widely, interest rates were usurious, and speculation was the principal business activity. This channel of influence was often not actually separate from others; some efficiencies of this sort appeared even as by-products of other more deliberate innovations. These advantages tended to flow from relations among the modern types of business organization. Hence such benefits went to Japanese businessmen, though they often opened up subsidiary avenues to wealth for a number of Taiwanese in commerce and in service enterprises.[18]

With no significant exceptions, the growth and spread of Japanese business activity in Taiwan served primarily to introduce capital into agriculture without greatly changing the operation of individual farms. It furnished a pattern of services between the fields and the markets in Japan through which to reap the economies of modern organization, and yet ensured that most of the proceeds were reinvested on the island in a pattern determined by official decision.

The Preparations for War

During the early or middle 1930's the Japanese Empire began to turn toward preparations for war. The colonies were called upon to increase the measure of their contribution in other lines of production besides Empire self-sufficiency in food. Taiwan was not abundantly endowed with the heavy stuff with which the war was to be made—metallic ores were lacking, and coal deposits were not plentiful—and so it was permitted to assume some of the burden of processing materials formerly supplied to Japan as agricultural and other primary produce. This decision did not issue entirely from military or strategic considerations, since in many cases it amounted to no

[18] Chartered banks were an exception. They harnessed funds for industrial investment, and were all owned and operated by Japanese. ". . . modern banks in Taiwan help to collect money from the population and loan it at a relatively low rate of interest to the big Japanese firms, while the Chinese [Taiwanese] have to apply for loans to other sources where they pay two to five times as high a rate of interest as that which the Japanese firms pay." Grajdanzev (1942), p. 126.